Wochnick, Heather M CIV USN (US)

From: Kito, Melanie R CIV NAVFAC SW
Sent: Thursday, November 04, 2010 12:38
To: Gilkey, Douglas E CIV OASN (EI&E), BRAC PMO West; Macchiarella, Thomas L CIV OASN (EI&E), BRAC PMO West
Subject: FW: Scope and cost tables for October
Attachments: Working GFPR Cost Table 10-06-10 Navy Allocation.pdf; Parcel B and G Scopes MACTEC GFPR MLC Quantities 10-5-10_Navy Allocation.xls

Here is the cost table for the ETCA grant

-----Original Message-----
From: Amy Brownell [mailto:Amy.Brownell@sfdph.org]
Sent: Wednesday, October 06, 2010 12:46
To: Kito, Melanie R CIV NAVFAC SW; Forman, Keith S CIV OASN (EI&E), BRAC PMO West; jeff.giangiuli@calibresys.com; steve.hall@ttemi.com; tim.mower@ttemi.com
Cc: JJFenton@mactec.com; drathnayake@mactec.com; RBrandt@Geosyntec.com; stephen.proud@lennar.com; JAustin@Geosyntec.com; Suzanne.Hudson@lennar.com; LRHENDRY@mactec.com; Thor Kaslofsky; Tiffany Bohee; Andrea Bruss; dcshipman@treadwellrollo.com; sreinis@treadwellrollo.com; gejohnson@treadwellrollo.com; george.schlossberg@kutakrock.com; Wells Lawson; Gregory_Schilz@aon.com; cynthia.evanko@aon.com
Subject: Scope and cost tables for October

Hi Melanie:

please see attached scope and cost tables to support our meeting tomorrow at 10:30 at CH2MHill in Oakland

We will discuss all of these items with you and go over in detail the elements included in each item.

Please note: we are still verifying and doing additional work with all members of the SFRA/City/Lennar/Mactec team to review numbers that will be submitted to insurance next week. At this time, we anticipate that the numbers attached here will not change EXCEPT for those related to the durable cover - see page 2 of the PDF = Lines 5.4/5.3 Durable Cover and associated LTMMR. Those two line items will change significantly as needed for insurance presentation.

We will walk through this issue with you tomorrow and explain the difference between the insured program vs. ETCA grant negotiations - as we have discussed.

thanks,
Amy Brownell, P.E.
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(See attached file: Working GFPR Cost Table 10-06-10 Navy Allocation.pdf) (See attached file: Parcel B and G Scopes MACTEC GFPR MLC Quantities 10-5-10_Navy Allocation.xls)

(b) (5), (b) (4)

(b) (5)

GFPR Cost Estimate
Prepared By MACTEC
"Most Likely" Quantity Estimate (Navy Allocation)
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WBS Task /Subtask	Description	Scoping Item	Unit	Quantity	Notes	Remarks
1.0	Project Planning and Scheduling:					Tasks to be completed by MACTEC as part of he ETCA
	Scheduling and Progress Reporting: Developing and maintaining a master project schedule and monthly progress reports.				This scope assumes project planning and scheduling for 10 years.	
		Schedule updates	ea	80	Mon hly for he 1st 5 yrs; quarterly for years 6 through 10.	
		Reports	ea	80	Mon hly for he 1st 5 yrs; quarterly for years 6 through 10.	
	Database Development and Maintenance: Development of a chemistry database to store all analytical data					
		SQL Database setup	ea	1	To develop from database furnished by the Navy	
		SQL Database maintenance	ea	1	Maintain database for 10 yrs.	
	Administra ive Record Support	Periodic deliverable requests	ea	1	Respond to requests to provide additional documents to the Navy and/or their contractors.	
2.0	Soil Gas Survey					Tasks will be conducted by the Navy with results and conclusions presented in the RD
	Parcel-wide soil gas survey for VOCs. Excludes radiological ARIC portion of IR7/18.				It is assumed that he Navy will have remedies in place to address any source of soil gas within 100 feet of Parcel B boundary prior to transfer.	
	Work Plans	Risk Methodology Work Plan			Requires interim meetings and negotia ions with regulators to develop the risk method.	
		Soil Gas Survey Work Plan				
	Soil Gas Survey Implementation:	Geoprobe mob/demob, concrete coring, sampling, TO-15 analysis, geotech samples			Where exceedances occur, follow-up sampling will take place to define he extent (See Task 5.3).	
	Soil Gas Survey Report					
	Development of Soil Gas Action Levels	Memorandum			Will be cited in the Remedial Design (RD); Memorandum will include what type of mitigation measures will be necessary based on detected soil gas levels	It is assumed that he Navy's Tech Memo will right-size he ARIC

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3.0	Remedial Design					Tasks will be conducted by the Navy
	Soil hot spot excavation, Soil vapor extrac ion system expansion & operation at Bldg 123; Soil cover concepts; Soil vapor control concepts; groundwater remediation through in-situ injection with Polylactate; Revetment construction at BOS-3 and part of BOS-1 in IR-23; land use controls, and Long-term groundwater monitoring.				Detailed soil cover and soil vapor control design will be completed under he ETCA.	Modifications to soil cover and soil vapor control will be acomplished in the RAWP under ETCA
3.1	Pre-Design Field Work	Mobilization, concrete coring, soil samples, soil gas samples, baseline soil gas samples			Navy to confirm need for any pre-design field work.	This task will be conducted by he Navy as necessary to support he preparation of the RD
	SVE Well Location Design for Bldg 123:	Collect/analyze groundwater samples				This task will be conducted by he Navy as necessary to support he preparation of the RD
	Polylactate Injection Design for IR-10A Plume:					
	Revetment Design / Soil Cover Design:	Topographic and hydrographic surveys, geotechnical evaluation			Navy to complete pre-design work necessary to prepare the RD for the revetment and soil cover. Soil cover design options will include hardscape options hat will be components of the future development structures and infrastructure. Navy to conduct geotech analysis	
3.2	Remedial Design Documents	Basis of design, specifications and drawings			Confirmation that Chromium VI in groundwater at IR Site 10 will not require treatment will be accomplished with BCT approval of the RD package for Parcel B.	Task will be in the Navy RD Modifications to soil cover and soil vapor control will be acomplished in the RAWP under ETCA
	Includes design for all the remedial elements including engineering controls and sheet pile wall for sea wall protection. Institutional Controls (ICs) Also includes the preparation of construction documents	LUCs/CRUPs				Task will be in the Navy RD Task to be completed within the RAWP as part of he ETCA
		Deed Restrictions		TBD		
		RMPs	ea	2	Includes Pre-RACR and Post-RACR RMPs	This task to be prepared by SFRA for the Navy to incorporate into the RD

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4.0	Remedial Action Work Plan (RAWP)					Tasks to be completed by MACTEC as part of he ETCA
	RAWP inclues the following: Soil vapor extraction expansion & operation at Bldg 123; In-situ injection with Polylactate at IR-10A; revetment construction at BOS-3 and part of BOS-1 in IR-23; Soil covers; Soil vapor engineering controls; Long-Term Groundwater Monitoring Plan.	Includes construction related work plans (e g., SAP, QAPP, HASP, Dust Control Plan, Site Security Plan, Site Radiation Plan, Storm Water Pollution Prevention Plan)	ea	1	ETCA tasks except hot spot excavation and any TPH work per the CAP. Soil cover and soil gas design	
5.0	Remedial Implementation					
5.1	Hot Spot Soil Excavations	Data Submittal			The Navy will prepare the RAWP, conduct excavation, conduct confirmation sampling, and prepare a RACR presenting the final condition of the site.	This task will be conducted by he Navy as necessary to support he preparation of the RD
5.2	Soil Vapor Extraction System Expansion & Operation				The Building 123 SVE system is to be expanded and operated per he ROD	Tasks to be completed by MACTEC as part of he ETCA
	The SVE system in Bldg 123 is to be expanded and operated per the ROD. The existing system covers approximately 11,350 sq. ft. with 10 ft unsaturated zone. The Phase III SVE Treatability Study (TS) recommends additional extraction wells be installed to reduce TCE concentrations at the west end of the building. Duration of operation is not specified or costed in the ROD but the Phase III SVE TS recommends running he system in a pulsed mode. MACTEC concurs, given asymptotic conditions have already been reached for most extrac ion wells wi hin the system. Running the system effectively for much longer han one year is not anticipated.					
	•Site Preparation Activities	Install extraction wells (4 in)	ea	3	Additional extraction wells as per the Navy Internal Draft RD	
		Install Vapor Mon. well pairs (2 in)	ea	4		
	Mark proposed well locations, / Dig-Safe coordination;					
		GPS survey - update system layout	ea	1		
	Install new wells for system expansion; Perform GPS surv					
	Permitting.					
		GAC Vessels-3,000 lbs ea	ea	2	Equipment procurment; well head construction; piping connections; erection of emissions stack; power hookup	
	•Retrofit and Construction					
	Equipment procurement; well head construction; piping	1000 gal poly transfer tank	ea	1		
	connections; emissions stack erection; power hookup	Blower Trailer	ea	1	Assumes a rented blower will be used.	
		Piping (2 to 6 in)	lf	2000		

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WBS Task /Subtask	Description	Scoping Item	Unit	Quantity	Notes	Remarks
		Electrical connection	ea	1		
		meter/circuit breaker panel	ea	0		

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	•System Shakedown Collect baseline analytical and PID measurements in new well points; establish injection well / extrac ion well pattern layout.	Collect baseline soil gas samples	ea	8	Pre-SVE soil gas sampling as part of the parcel-wide soil gas survey From new SVE wells (3 wells) & VM wells (4 wells [2 well pairs]) & 10% dup; existing wells sampled under predesign	
	•Operations, Maintenance and Repor ing	Remedial Action soil gas sampling event	event	4	System pulsed for 1-yr period. Running he system for much longer than one year is not anticipated. 69 samples per event (new/existing SVE/VM wells & off-gas plus 10% dup)	
	System pulsed for 1-yr period; After removal of bulk mass of contaminant within new extraction area (assume 2 mo), commence wi h pulsed opera ion. Assume 2 wks on and 3 wks off. Gas samples measured by PID each sampling event and off-site analyses every other sampling event.	PID gas measurement event	event	9	69 samples per event	Number of samples and Sampling Freq. assumed. No guidance provided in FD DBR
	Reporting: Semi-annual (mid-treatment and final tech-memo)	Tech Memos	ea	2	Data Tech memos (interna draft & final)	
	•System Decommissioning					
	Remove and dispose of off-gas carbon absorbers	SVE/VM well decommissionin	ea	60	Well decommissioning, GAC disposal, equipment decommissioning	
	Remove piping / grout & decommission wells	GAC disposal	lbs	6000		
	Salvage SVE trailer for continued use elsewhere	Equipment decommissioning	ea	1		
5.3	VOC Groundwater Remediation					Tasks to be completed by MACTEC as part of he ETCA
	The IR-10A (VOC) plume is to be treated by injec ion of lactate per he ROD. The ROD suggests a single injection within a localized hot zone will achieve remedial objectives.				Navy to present in-Situ Polylactate injection to treat the IR10A VOC plume as per the ROD as an enhanced bioremediation remedy in the RD. Active enhancement will be followed by a natural attenuation phase over an indefinite period of time.	
	•Site Preparation Activities Mark proposed injection loca ions, / Dig-Safe coordination; Collect baseline groundwater parameters	Sample existing wells	ea	11	Change from 14 as presented in 3-31-10	

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	•Polylactate Injection Round 1	Mobilization	ea	1		
	Perform 1st round of injections; followed by GPS location survey.	Advance drive points	ea	43	Injections within an approximate 7,500 sq. ft. plume area.	Per FD DBR
		Cores hru floor slabs	ea	12	Assumed not to readily coincide with cores for SVE or soil gas survey.	Per FD DBR Fig. 16
		GPS survey - document pts	ea	1		
	•Process Monitoring Round 1					
	Collect post injection groundwater samples	Collect and analyze samples from exis ing wells	ea	26	(2) Collect at 6 months and 1 year following Round 1 Injection (11 wells plus QA samples for 2 rounds); Sampling will be combined with basewide / long-term groundwater monitoring program to he greatest extent possible.	Number of well per FD DBR Assumed sampling freq. 22 samples + 4 QA/QC
	Two years of Monitored Natural Attenuation (MNA) as part of long-term monitoring					
	Prepare Tech-Memo	Tech-memo (Internal Draft & Final)	ea	1		
	Prepare Annual Tech-Memos	Tech-memo (Internal Draft & Final)	ea	1		
	Post-Verification Soil Gas Sampling:	Mobilization		1		Assumed task and not specified in FD DBR
		Concrete coring		20		
		Sample survey points		43	Focus on IR10 injection/SVE remedial areas and Parcel B/C boundary area in the vicinity of Bldg 134.	
5.4	Durable Cover				1.382 million square feet of cover is required at Parcel B. Area is based on he existing development excluding radiological impacted IR-07/18. The cover will consist of a design consistent wi h the RD specifications and as documented in the Remedial Action Plan. Exis ing Navy buildings/building foundations will be abated and demolished by others prior to construction of he durable cover.	Tasks to be completed by MACTEC as part of he ETCA
	•Soil Cover Construction	Cover Area	sq ft	152,460	Per draft final RD, Appendix B	
	•Asphalt Cover Construction	Cover Area	sq ft	1,254,528	Per draft final RD, Appendix A	
	•Drainage Design	Cover Area	ea	1	Assumes above ground drainage pr DF DBR.	
	•Final Cover maintenance at Year 10	Cover Area	sq ft	414,012	RD did not speicify. Assume on time resurfacing of the entire asphalt area over a 30-year period (1/3 of the asphalt cover area every 10 years).	
	•Shotcrete Cover Construc ion	Cover Area	sq ft	0	Per Draft RD, Appendix B	Removed in FD DBR, but not added to soil cover

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WBS Task /Subtask	Description	Scoping Item	Unit	Quantity	Notes	Remarks
	•Steel Plate Installation		ea	1	8 feet by 40 feet steel plate and fill per Navy design	Removed in FD DBR. RTCs indicates that sheet pile will be replaced by Steel Plate/Fill

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WBS Task /Subtask	Description	Scoping Item	Unit	Quantity	Notes	Remarks
5.5	Soil Vapor Control Technology				Navy to determine the VOC ARIC. SFRA to provide the Navy wi h vapor mitigation options to incorporate into development plans. Navy to provide engineering control options in the RD.	Tasks to be completed by MACTEC as part of he ETCA
	Soil Vapor Mitigation Barrier	Area Needing Vapor Mitiga ion Barrier	sq ft	404,780	Navy FD DBR does not provide guidance on Vapor Mitiga ion Controls nor area requiring controls	Assume Spray applied impermable barrier
	Vapor Control	Area Needing Engineering Controls	sq ft	404,780	Enginnering controls to be implemented with buidling construction	Assume passive venting
	•1 Round of Performance Monitoring Post-Construc ion		events	15	One round of indoor air monitoring post construction: Assumes 15 buildings 2 samples per building + 10% = 3 samples per event= 45 samples (15x3)	
5.6	Groundwater Remediation - Organo Sulfur					Tasks will be conducted by the Navy if required by the regulatory agencies
5.7	Long-Term Groundwater Monitoring				Navy to design long-term groundwater monitoring plan and present in the RD.	Tasks to be completed by MACTEC as part of he ETCA
	•Field Work					
	a) Years 1-2 semi-annual monitoring during remedial implementation				Long-term monitoring is required in addition to the process monitoring for groundwater remedial actions. Navy's proposed semi-annual sampling program will be performed during remedy implementation. Monitoring program does not include wells within IR7/18 ARIC.	
	This is the level of effort for groundwater monitoring after property transfer, and during implementa ion of the remedy. The semi-annual monitoring program conducted during remedial implementation will Include the following wells: 1) 8 wells that are part of the proposed monitoring network Assumes that the remedy will be implemented in year 1 and that 5 of the wells, located in the IR10 plume and included in the monitoring network, will be monitored for 1 year as part of the remedy (under Task 5.3) and will not be included in the semi-annual groundwater monitoring program in year 1.	Includes 3 wells for other VOC monitoring, 4 wells for IR Site 26 Mercury Monitoring, and 1 additional well for Bay Margin Metals Monitoring. 30 GW wells for water levels only. Samples analyzed per the RAMP	events	4	Do we include the two IR07 wells? They are not included in these assump ions. event = field sampling event; water level monitoring and collection and analysis of groundwater samples from monitoring wells.	

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	b) Years 3-5 Semi-Annual Monitoring		events	6	Includes 6 semi-annual monitoring events	
	Assumes that 1 year after property transfer, the remedy will have been implemented and the post remedy monitoring will begin. It assumes that 5 of the wells included in he monitoring network that were part of he remedy monitoring will be re-incorporated into he long term monitoring program. Program would include 8 wells that are part of the proposed monitoring network (including 5 monitoring wells that were within the IR10 plume and 3 Bay Margin wells monitoired for metals [including 1 well for VOC monitoring]). 42 wells for water levels only.	Samples analyzed per the RAMP			Do we include the two IR07 wells? They are not included in these assump ions.	
	c) Years 6-10 annual sampling		events	5	Includes 5 annual monitoring events	
	The monitoring program will include the 3 wells that are part of the proposed monitoring network. 52 wells for water levels only.	Samples will be analyzed per he RAMP, but MNA analysis only conducted on samples collected in Years 5 and 10.			By end of 3 years, it is assumed that the 7 TPH monitoring program wells will be eliminated from he long-term groundwater monitoring program.	
	The monitoring program will include the 7 TPH program wells per Parcel B TPH Work Plan Addendum.	Samples will be analyzed per he Parcel B TPH Work Plan Addendum.	events	4	Includes 4 quarterly sampling events	RAMP did not include TPH monitoring nor did it specify monitoring of sentinel wells.
	•Data Management/Evaluation/Validation/Reporting					
	a) Data Valida ion	Validate chemical analytical data and generate data validation summary report.	events	15	event = field sampling event. Includes 10 semi-annual, and 5 annual monitoring events	
	For each sampling event, validate chemical analytical data and generate a Quality Control Summary Report. Level III validation will be performed on 80% of he samples and Level IV validation will be performed on 20% of the samples					

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WBS Task /Subtask	Description	Scoping Item	Unit	Quantity	Notes	Remarks
	b) Data Management For each sampling event, he water level and chemical analytical data and data validation qualifiers will be loaded into a SQL database	Load data from groundwater monitoring program	events	15	event = field sampling event. Includes 10 semi-annual, and 5 annual monitoring events	
	c) Data Evaluation For each sampling event, he groundwater elevation and chemical analytical data will be complied in tables and figures, evaluated and interpreted for presentation in applicable semi-annual and annual reports	Compile and evaluate data from groundwater monitoring program	events	15	event = field sampling event. Includes 10 semi-annual, and 5 annual monitoring events	
	d) Groundwater Monitoring Reporting Prepare reports presenting and interpreting data collected for each semi-annual and annual event. Draft and Draft Final versions of each report will be generated.	Prepare groundwater monitoring report				
	Semi-Annual Reports		ea	5	Prepare one semi-annual report per semi-annual event Years 1-5	
	Annual Reports		ea	10	Prepare one annual report per year Years 1-10	
	TPH Closeout Report		ea	1	Prepare one TPH closeout report	
	•Meetings Attend program technical mee ings with agencies	Agency meetings	ea	13	Two meetings per year for the first three years and 1 meeting per year there after.	
5.8	Monitoring Well Abandonment/Extensions/ and Rehabilita ion					Tasks to be completed by MACTEC as part of he ETCA
	•Well Abandonment Abandon remaining wells at end of groundwater monitoring program	Abandon wells	well	47	Navy has started well abandonment Abandon all remaining wells (47) except three wells for long-term monitoring. This number does not include he two IR07 long-term monitoring wells.	
	•Well Rehabilita ion Re-habilitate wells as necessary anticipating hat some may have filled with sediment or other obstructions.	Redevelop wells as needed - 5 events - 3 wells per event	events	2	Number dependent on Navy's long-term monitoring plan Assume hat one field event will be performed every 5 years to redevelop the wells (year 5 and 10)	
	•Well Extensions					

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		Well extensions	well	50	50 wells (13 wells monitoring program, 37 water level only) This number does not include he two IR07 long-term monitoirng wells	

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5.9	5-Year Reviews Support (2013 to 2020)				(1)	Task to be completed by MACTEC as part of he ETCA
	•Document Support for Preparation of 5-Year Review Reports by NAVY	Document Support	ea	2	Navy to complete in years 2013 and 2018. Next version would be due in 2023 which is beyond he 10 year time line. Minimal document support effort is expected for this task.	
5.10	TPH Program					Task will be conducted by the Navy
5.11	Shoreline Revetment (BOS 3 [IR-26] & BOS 1 [IR-23])					Tasks to be completed by MACTEC as part of he ETCA
5.11.1	•Site Preparation Activities	Permit applications	ea	1	Navy wil have completed the removal of he Rad ARIC from Parcel F	
5.11.2	•Riprap Construc ion	Riprap	cy	8,787		Per FD DBR and TT email 9/28
	Overall length to be determined in he RD. Stone size used to build he revetment will be determined in the RD	Crushed Rock	cy	1,509		
		Filter Fabric	sy	15,133		
		Soil Relocation	cy	800	Assume all can be reused onsite. No offsite disposal of radioactive material is included.	Per FD DBR page 32. However, diff. between cut and fill in Appendix I is 1,364 cy.
		Debris Disposal	cy	1,700	Assume his is non-hazardous material.	Per FD DBR page 32
	•Radiological Screening		days	25	Excavated sediments for revetment construc ion are to be field screened for radiological contamination. It is assumed that excavated sediments will be suitable for reuse onsite prior to placement of durable cover. Any radiologically contaminated material willl be stockpiled at a mutually agreeable location.	
5.11.3	•Integration with Soil Cover -To be done concurrently with revetment construction.		ea	1		
5.11.4	•Operations and Maintenance	Monitoring effort for 30 years	ea	1	O&M for the revetment consists of annual walk-over inspections. The structure will also be surveyed both above and below water at 10-year intervals. Revetment repairs are planned for hree times over the 30-year period.	

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5.12	Implementation of Institutional Controls	Enforce Deed Restrictions	ea	1	The duration for implementing ICs is expected to be in perpetuity in accordance with he LUCIP presented in the RD.	Tasks to be completed by MACTEC as part of he ETCA
		Annual Inspec ions/Reporting	ea	1	Activi ies associated with the Pre-RACR and Post RACR RMP related inspections.	
		Risk Management Oversight	ea	1		
		O&M of non-radiological impacted IR 7/18 area	ea	1	One LUCIP post RACR. Approach for update of LUCIP will be defined in the LUC RD. IR 7/18 area O&M activities covered under a separate agreement.	
6.0	Final Remedial Action Completion Report (RACR)					Tasks to be completed by MACTEC as part of he ETCA
	•Final Remedial Ac ion and Site Closure documentation	Report	ea	1	The RACR has been budgeted as one report. However consideration has been given to the remedial components being completed at different times, which will necessitate submission of up to 7 possible addenda to the RACR for the seven major remedial components (SVE, post-remedial soil gas survey, groundwater remediation, capping, revetment construc ion and groundwater monitoring)	The soil excavation RACR to be completed by he SFRA on the basis of the Navy Tech Memo (see WBS task 5.1)
7.0	Public Involvement					Tasks to be completed by MACTEC as part of he ETCA
7.1	•Development of a Community Involvement Plan (CIP)	Community Involvement Plan	ea	0	No CIP is listed in the TSRS	
		Fact Sheets	ea		2 fact sheets per yr for yrs 1-5 (10 fact sheets); 1 fact sheet per yr for yrs 6-10 (5 fact sheets). It's assumed that Fact Sheet printing and distribu ion will be performed by he SFRA.	
7.2	•Fact Sheets			15		
7.3	•Citizen Advisory Committee (CAC) meetings	CAC Mee ings	ea	32	6 meetings per yr for yrs 1-3 and 2 meetings per yr for yrs 4-10	
8.0	Regulatory Oversight					Tasks to be managed by SFRA as per the ETCA and completed by the BCT as per the Amended FFA
		Estimated cost to be provided by the regulatory agencies.	TBD	TBD	Paid directly to agencies by SFRA. (1)	
9.0	Insurance					Insurance to be procured by SFRA as specified in the ETCA
		Includes Cost Cap & PLL Insu	TBD	TBD	Coverage duration is expected to be 10 years; (5)	
10.0	ETCA Administrative Support					Tasks to be completed by the SFRA as part of the ETCA

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		SFRA ETCA Oversight	TBD	TBD	(1)	

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11.0	Risk Assumption					Tasks to be completed by SFRA/Lennar/Mactec as defined in the ETCA
			TBD	TBD		

Notes:
(1) Concurrent activity with Parcel G work.
AOC = Areas of Concern
ARIC = Area Requiring Institutional Controls
CAA = Corrective Action Areas
CAC = Citizen Advisory Committee
CAP = Corrective Action Plan
CRUP = Covenant to Restrict Use of Property
cy = Cubic Yards
DVE = Dual-Phase Vacuum Extraction
ea = Each
ESLs = Environmental Screening Levels
ETCA = Early Transfer Cooperative Agreement
GAC = Granular Activated Carbon
gw = groundwater
HSP = Health & Safety Plan
IC = Institutional Controls
LUCs = Land Use Controls
M = Million
MNA = Monitored Natural Attenuation
NA = Not Available
O&M = Operation and Maintenance
PID = Photoionization Detector
QAPP = Quality Assurance Project Plan
RA = Remedial Action
RACR = Remedial Action Completion Report
RAWP = Remedial Action Work Plan
RMP = Risk Management Procedures
ROD = Record of Decision
SAP = Sampling & Analysis Plan
SFRA = San Francisco Redevelopment Agency
SQL = Structured Query Language
SVE = Soil Vapor Extraction
sy = Square Yard
TBD = To be determined
TCE = Trichloroethylene
TMSRA = Technical Memorandum in Support of a Record of Decision Amendment

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WBS Task /Subtask	Description	Scoping Item	Unit	Quantity	Notes	Remarks

TPH = Total Petroleum Hydrocarbons

TS - Treatability Test

VM = Vapor Monitoring

VOC = Volatile Organic Compound

WBS = Work Breakdown Structure

ZVI = Zero Valent Iron

GFPR Cost Estimate
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"Most Likely" Quantity Estimate (Navy Allocation)
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WBS Task / Subtask	Description	Scoping Item	Unit	Quantity	Notes	Remarks
1.0	Project, Planning and Scheduling:					Tasks to be completed by MACTEC as part of the ETCA
	Scheduling and Progress Reporting: Developing and maintaining a master project schedule and monthly progress reports.				This scope assumes project planning and scheduling for 10 years.	
		Schedule updates	ea	80	Monthly for the 1st 5 yrs; quarterly for years 6 through 10.	
		Reports	ea	80	Monthly for the 1st 5 yrs; quarterly for years 6 through 10.	
	Database Operation and Maintenance: Operation and maintenance of a chemistry database to store all analytical data					
		SQL Database setup	ea	1	To develop from database furnished by the Navy	
		SQL Database maintenance	ea	1	Maintain database for 10 yrs.	
	Administrative Record Support					
		Periodic deliverable requests	ea	1	Respond to periodic requests to provide additional copies of deliverables to the Navy and/or their contractors.	
2.0	Soil Gas Survey					Tasks will be conducted by the Navy with results and conclusions presented in the Completion Report
	Parcel-wide and at discrete suspect areas for VOCs.				It is assumed that the Navy will have remedies in place to address any source of soil gas within 100 feet of the Parcel G boundary prior to transfer.	
	Work Plans					
		Risk Methodology Work Plan			Requires interim meetings and negotiations with regulators to develop the risk method.	
		Soil Gas Survey Work Plan				
	Soil Gas Survey Implementation:				Where exceedances occur, follow-up sampling to define the extent (See Task 5.4).	
		Geoprobe Mob/Demob, concrete coring, sampling, TO-15 analysis, geotech samples				
	Soil Gas Survey Report					
	Development of Soil Gas Action Levels .	Memorandum			Will be cited in the Remedial Design (RD); Memorandum will include what type of mitigation measures will be necessary based on detected soil gas levels	

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3.0	Remedial Design				Detailed soil cover and soil vapor control design will be completed in an Amended RD under the ETCA.	Tasks will be conducted by the Navy
	Soil hot spot excavation; Soil cover concepts; Soil vapor control concepts; landuse controls, and long-term groundwater monitoring. Conclusion of the ZVI Treatability Study to state that the need for additional groundwater remediation is not necessary. Navy this summary as part of the RD				t is assumed that the following components have been or will be completed by the Navy prior transfer: Removal of the Pickling and Plating Sump and associated soils as determined by confirmation sampling; Hot spot excavations; removal of all soil stockpiles as per the ROD; and completion of all radiological sampling and remediation.	Modifications to soil cover and soil vapor control will be acomplished in the RAWP under ETCA
	Pre-Design Field Work				Navy to confirm need for any pre-design field work	This task will be conducted by the Navy as necessary to support the preparation of the RD
	Soil Cover Design	Topographic survey and geotechnical evaluation			Navy to identify performance criteria for site cover design Navy to conduct geotech analysis	
	Remedial Design Documents					Task will be in the Navy RD
	Includes design for all the remedial elements including engineering controls.	Basis of design, specifications and drawings				Modifications to soil cover and soil vapor control will be acomplished in the RAWP under ETCA
	Institutional Controls (ICs) Also includes the preparation of construction documents	LUCs/CRUPs				Task will be in the Navy RD
		Deed Restrictions		TBD		Task to be completed within the RAWP as part of the ETCA
		RMPs		2	Includes Pre-RACR and Post-RACR RMPs	This task to be prepared by SFRA for the Navy to incorporate into the RD
4.0	Remedial Action Work Plan (RAWP)					Tasks to be completed by MACTEC as part of the ETCA
	RAWP includes the following: soil covers; Soil vapor engineering controls; and Long-Term Groundwater Monitoring Plan.	Includes construction related work plans (e.g., SAP, QAPP, HASP, Dust Control Plan, Site Security Plan, Site Radiation Plan, Storm Water Pollution Prevention Plan)	ea	1	ETCA tasks except hot spot excavation and any TPH work per the CAP.	

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5.0	Remedial Implementation					
	Hot Spot Soil Excavations	Data Submittal			The Navy will prepare the RAP, conduct excavation, conduct confirmation sampling, and prepare a Tech Memo presenting the final condition of the site. SFRA will prepare the RACR for this activity.	This task will be conducted by the Navy as necessary to support the preparation of the RD
	Groundwater Remediation				The conclusion of the ZVI Treatability Study Report indicates this task may not be necessary.	
5.2.6	Post-Verfication Soil Gas Sampling					Task to be completed by MACTEC as part of the ETCA
		Mobilization		1		Additional task not specified in DF DBR
		Sample survey points		35		
5.3	Durable Cover				1.15M square feet of cover is required. Area is based on the existing development. The cover will consist of a design consistent with the RD specifications and as documented in the Remedial Action Plan. Existing Navy buildings/building foundations will be abated and demolished by others prior to construction of the durable cover.	Tasks to be completed by MACTEC as part of the ETCA
	•Asphalt Cover Construction	Cover Area	sq ft	1.15M	Per DF DBR, Appendix B	Navy revised estimate to 1.15M sf.
	•Drainage Design	Cover Area	ea	1	Assumes above ground drainage per FD DBR	
	•Final Cover maintenance at Year 10	Cover Area	sq ft	379,500	RD did not speicify. Assume on time resurfacing of the entire asphalt area over a 30-year period (1/3 of the asphalt cover area every 10 years).	
5.4	Soil Vapor Control Technology				Navy to determine the VOC ARIC. SFRA to provide the Navy with vapor mitigation options to incorporate into development plans. Navy to provide engineering control options in the RD.	Task to be completed by MACTEC as part of the ETCA
	Soil Vapor Mitigation Barrier	Area Needing Vapor Mitigation Barrier	sq ft	209,200	Areas are for identified VOC plumes plus an approximate 20% buffer. Areas include portions that cross over the Parcel G boundary (Figure G-4). Areas exclude any risk assessment 100-foot buffer from the groundwater plume. VOC plume areas are based primarily on Navy field plan treatability study hydropunch & soil gas data dated July/August 2008 as summarized on Figures G-2 and G-5. Areas will be reviewed and readjusted following final results of the ZVI treatability study	Assumes Spray applied impermeable barrier.
	Vapor Control	Area Needing Engineering Controls	sq ft	209,640	Navy FD DBR does not provide guidance on Vapor Mitigation Controls nor area requiring controls Enginnering controls to be implemented with buidling construction	Assume passive venting
	•1 Round of Performance Monitoring		events	6	One round of indoor air monitoring post construction: Assumes 6 buildings 2 samples per building + 10% = 3 samples per event =18 samples (6x3)	

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5.5	Long-Term Groundwater Monitoring				Navy to design long-term groundwater monitoring plan and present in the RD.	Tasks to be completed by MACTEC as part of the ETCA
	•Field Work	Includes monitoring well verification/field reconnaissance				
	a) Years 1-2 Semi-Annual Sampling In Years 1-2 collect and analyze groundwater samples from 11 wells semi-annually and collect water levels from 27 additional wells	Samples analyzed per the RAMP	events	4	Event = field sampling event; water level monitoring and collection and analysis of groundwater samples from monitoring wells. Includes 4 semi-annual monitoring events.	
	b) Years 3-5 Semi-Annual Sampling Collect and analyze groundwater samples from 2 wells semi-annually in Years 3-5 and collect water levels form 31 additonal wells.	Samples analyzed per the RAMP	events	6	Event = field sampling event; water level monitoring and collection and analysis of groundwater samples from monitoring wells. Includes 6 semi-annual monitoring events.	
	•Data Validation/Management/Evaluation/Reporting a) Data Validation For each sampling event, validate chemical analytical data and generate a Quality Control Summary Report. Level III validation will be performed on 80% of the samples and Level IV validation will be performed on 20% of the samples	Validate chemical analytical data and generate data validation summary report.	events	10	Event = field sampling event. Includes 10 semi-annual monitoring events.	
	b) Data Management For each sampling event, the water level and chemical analytical data and data validation qualifiers will be loaded into a SQL database	Load data from groundwater monitoring program	events	10	Event = field sampling event. Includes 10 semi-annual monitoring events.	
	c) Data Evaluation For each sampling event, the groundwater elevation and chemical analytical data will be complied in tables and figures, evaluated and interpreted for presentation in applicable semi-annual reports	Compile and evaluate data from groundwater monitoring program	events	10	Event = field sampling event. Includes 10 semi-annual monitoring events.	
	d) Report Preparation Prepare a report presenting and interpreting data collected for each semi-annual event. Draft and Final versions of each report will be generated.	Prepare groundwater monitoring reports				

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WBS Task / Subtask	Description	Scoping Item	Unit	Quantity	Notes	Remarks
	Semi-Annual Reports Prepare a report presenting and interpreting data collected for each semi-annual event. Draft and Final versions of each report will be generated.		ea	5	5 semi-annual reports for Years 1-5.	
	Annual Reports Prepare annual report at the end of each year that will provide comprehensive data evaluation and recommendations. Assume Draft and Final versions of each report.		ea	5	5 annual reports for Years 1-5	
	e) Meetings Attend yearly meeting with agencies to discuss results of groundwater monitoring program and recommendations	Agency meetings			See Parcel B for quantities associated with this task	
5.6	Well Abandonment/Extensions/ and Rehabilitation					Tasks to be completed by MACTEC as part of the ETCA
	•Well Abandonment 38 wells abandoned in two separate events.	Abandon wells	well	38	Navy has started well abandonment Does not include 4 other wells that are not long-term monitoring or DTW wells (PA35P01A, PA36MW02A, IR36MW17A, IR36MW128A).	
	•Well Rehabilitation Re-habilitate wells as necessary anticipating that some may become filled with sediment or other obstructions.	Redevelop wells as needed - 5 events - 3 wells per event	events	2	Number dependent on Navy's long-term monitoring plan Assume that one field event will be performed every 5 years to redevelop the wells (year 5 and 10)	
	•Well Extensions The potential requirement for well extensions will be assessed based upon the area of 2 foot cover	Well Extentions	well	38	Changed to 38 wells (11 wells monitoring program, 27 water level only)	
5.7	5-Year Reviews (2013 to 2043)				(1)	Task to be completed by MACTEC as part of the ETCA
	•Preparation of Five-Year Reviews	Reports	ea	2	Navy to complete in years 2013 and 2018. Next version would be due in 2023 which is beyond the 10 year time line. Minimal document support effort is expected for this task.	

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5.8	Implementation of Institutional Controls				The duration for implementing ICs is expected to be in perpetuity in accordance with the LUCIP presented in the RD.	Task to be completed by MACTEC as part of the ETCA
		Enforce Deed Restrictions	ea	1	One LUCIP post RACR. Approach for update of LUCIP will be defined in the LUC RD.	
		Annual Inspections/Reporting	ea	1	Activities associated with the Pre-RACR and Post RACR RMP related inspections.	
		Risk Management Oversight	ea	1		
5.9	TPH Program					Task will be conducted by the Navy
6.0	Final Remedial Action Completion Report (RACR)					Tasks to be completed by MACTEC as part of the ETCA
	•Final Remedial Action and Site Closure documentation	Report	ea	1	The RACR has been budgeted as one report. However consideration has been given to the remedial components being completed at different times, which will necessitate submission of up to 4 possible addenda to the RACR for the major remedial components (Post-remedial soil gas survey, capping, groundwater monitoring).	The soil excavation RACR to be completed by the SFRA on the basis of the Navy Tech Memo (see WBS task 5.1)
7.0	Public Involvement					Tasks to be completed by MACTEC as part of the ETCA
7.1	•Updates to the Community Involvement Plan (CIP)	Community Involvement Plan Updates	ea	0	No CIP is listed in the TSRS	
7.2	•Fact Sheets, and attendance of Citizen Advisory	Fact Sheets		15	2 fact sheets per yr for yrs 1-5 (10 fact sheets); 1 fact sheet per yr for yrs 6-10 (5 fact sheets). It's assumed that Fact Sheet printing and distribution will be performed by the SFRA.	
7.3	•Citizen Advisory Committee (CAC) meetings	CAC Meetings		20	2 meetings per yr for yrs 1-10	
8.0	Regulatory Oversight					Tasks to be managed by SFRA as per the ETCA and completed by the BCT as per the Amended FFA
		Estimated cost to be provided b the regulatory agencies.	TBD	TBD	Paid directly to agencies by SFRA. (1)	
9.0	Insurance					Insurance to be procured by SFRA as specified in the ETCA

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		Includes Cost Cap & PLL	TBD	TBD	(1) Coverage duration is expected to be 10 years;	

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		Insurance			Additional groundwater remediation contingencies may be needed such as Lactate or Organo-Sulfur injections.	
10.0	ETCA Administrative Support					Tasks to be completed by the SFRA as part of the ETCA
		SFRA ETCA Oversight	TBD	TBD	(1)	
11.0	Risk Assumption					Tasks to be completed by SFRA/Lennar/Mactec as defined in the ETCA
			TBD	TBD		

Notes:
(1) Concurrent activity with Parcel B work.
BCT = BRAC Cleanup Team
BRAC = Base Realignment and Closure
CAC = Citizen Advisory Committee
COCs = Chemicals of Concern
CRUP = Covenant to Restrict Use of Property
cy = Cubic Yards
DVE = Dual-Phase Vacuum Extraction
ea = Each
ETCA = Early Transfer Cooperative Agreement
GAC = Granular Activated Carbon
gw = Groundwater
HSP = Health & Safety Plan
IC = Institutional Controls
LUCs = Land Use Controls
M = Million
NA = Not Available
QAPP = Quality Assurance Project Plan
RA = Remedial Action
RACR = Remedial Action Completion Report
RAWP = Remedial Action Work Plan
RG = Remedial Goal
RMP = Risk Management Procedures
ROD = Record of Decision
SAP = Sampling & Analysis Plan
SFRA = San Francisco Redevelopment Agency
SQL = Structured Query Language
SVE = Soil Vapor Extraction
TBD = To be determined
TPH = Total Petroleum Hydrocarbons
TS = Treatability Study
VM = Vapor Monitoring

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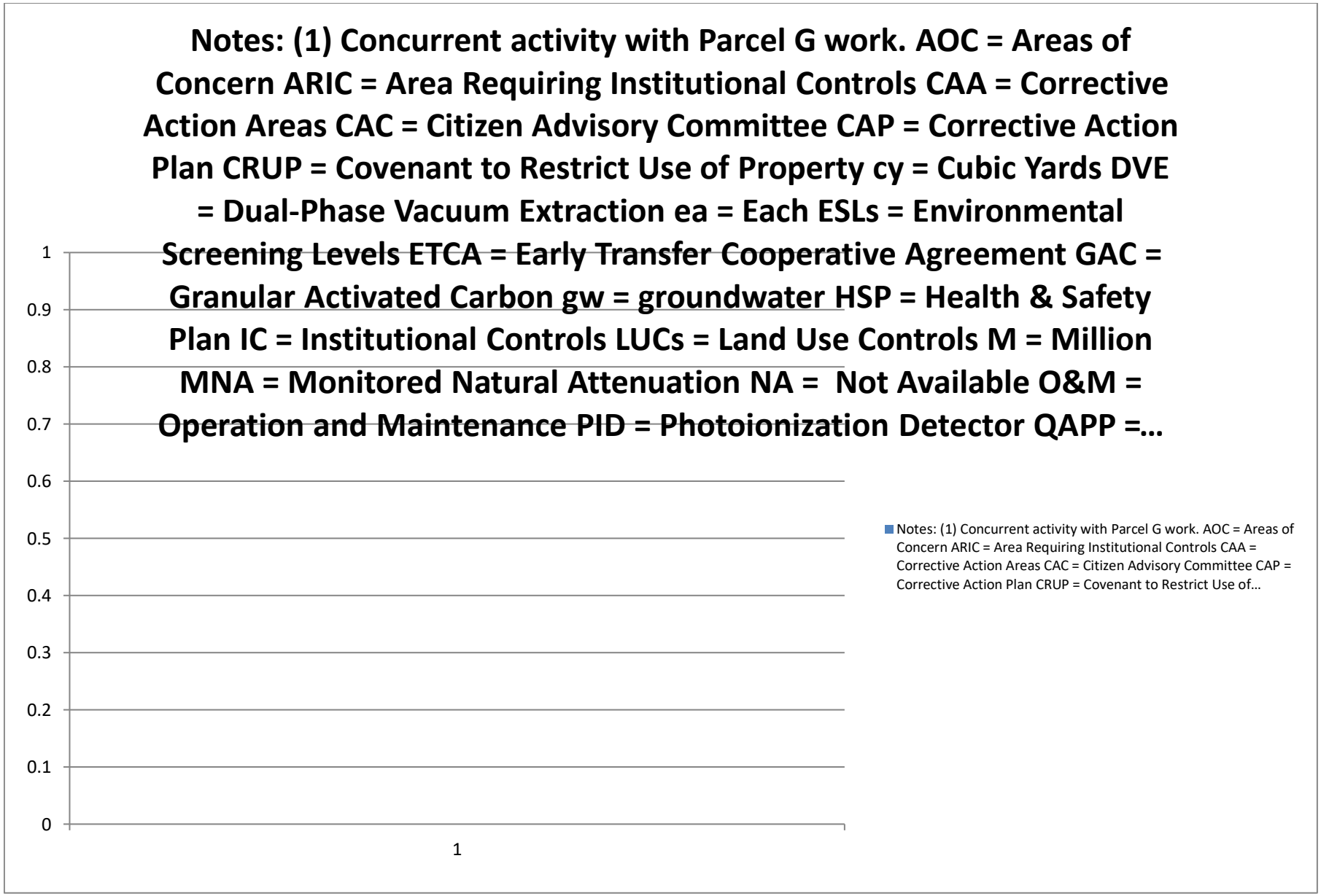
VOC = Volatile Organic Compound

WBS = Work Breakdown Structure

ZVI = Zero Valent Iron


Notes: (1) Concurrent activity with Parcel G work. AOC = Areas of Concern ARIC = Area Requiring Institutional Controls CAA = Corrective Action Areas CAC = Citizen Advisory Committee CAP = Corrective Action Plan CRUP = Covenant to Restrict Use of Property cy = Cubic Yards DVE = Dual-Phase Vacuum Extraction ea = Each ESLs = Environmental Screening Levels ETCA = Early Transfer Cooperative Agreement GAC = Granular Activated Carbon gw = groundwater HSP = Health & Safety Plan IC = Institutional Controls LUCs = Land Use Controls M = Million MNA = Monitored Natural Attenuation NA = Not Available O&M = Operation and Maintenance PID = Photoionization Detector QAPP =…
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
1
Notes: (1) Concurrent activity with Parcel G work. AOC = Areas of Concern ARIC = Area Requiring Institutional Controls CAA = Corrective Action Areas CAC = Citizen Advisory Committee CAP = Corrective Action Plan CRUP = Covenant to Restrict Use of…